

## PATENT ABSTRACTS OF JAPAN

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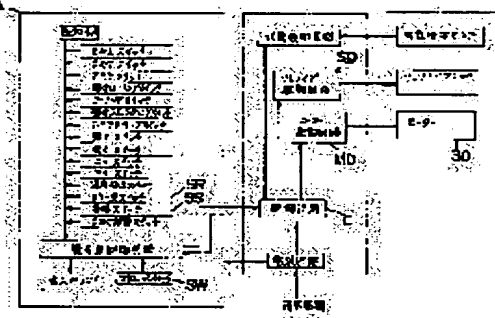
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## (54) MASSAGING MACHINE

## (57)Abstract:

PURPOSE: To repeat a certain message action in the case of massage with automatic course function by executing the massage action which is already finished, again when the time of operating a repetition instructing means is within prescribed time after a certain massage action is finished and the next massage action is started.

CONSTITUTION: Corresponding to instructed contents given by a manipulator A, a control circuit C turns on/off a motor 30, switches the turning direction, performs a treating action by a treating tool or moves the treating tool. The manipulator A is provided with a 'repeat' switch SR and a 'skip' SS and when the switch SR is operated while the automatic course massage is executed, the massage under executing at present is repeated once more by the control circuit C without starting the next massage. Concerning the massage to be repeated when the switch SR is operated, the last massage is executed within prescribed time after the last massage is finished and the next massage is started.



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## CLAIMS

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### [Claim(s)]

[Claim 1] In the massage machine with an automatic course function which carries out sequential execution of the various massage actuation as the program set up beforehand While having a repeat directions means to direct the repeat of the massage actuation under activation, and the control means which performs again massage actuation directed with this repeat directions means at that time A control means is a massage machine characterized by performing this again as massage actuation which should repeat the already ended massage actuation when it is in predetermined time, after the massage actuation with the time of a directions means being operated repeatedly is completed and moving to the next massage actuation.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Industrial Application] This invention relates to a massage machine and the massage machine with an automatic course function which carries out sequential execution of the various massage actuation as the program set up especially beforehand.

#### [0002]

[Description of the Prior Art] Although various offers of the massage machine with an automatic course function are made conventionally, what is considered to be effective is set up by a large majority of men as this automatic course, and, generally the user is constituted selectable in two or more automatic courses.

#### [0003]

[Problem(s) to be Solved by the Invention] However, neither by the condition of those who receive a massage, nor liking, even if there was a request of wanting to repeat a certain massage under automatic course massage, this was able to be answered by the conventional thing. Succeeding in this invention in view of such a point, the place made into the purpose is to offer the massage machine which can answer a request called the repeat of a certain massage actuation.

#### [0004]

[Means for Solving the Problem] In the massage machine with an automatic course function which carries out sequential execution of the various massage actuation as

the program to which the deer was carried out and this invention was set beforehand While having a repeat directions means to direct the repeat of the massage actuation under activation, and the control means which performs again massage actuation directed with this repeat directions means at that time After the massage actuation with the time of a directions means being operated repeatedly ends a control means and moving to the next massage actuation, when it is in predetermined time, it has the description as massage actuation which should repeat the already ended massage actuation to perform this again.

[0005]

[Function] According to this invention, a repeat is only directed with a repeat directions means, and since massage actuation to repeat is performed repeatedly and the above-mentioned directions were moreover overdue for a while, even if the massage actuation was already completed and it has moved to the next massage actuation, the repeat of the demanded massage actuation is made.

[0006]

[Example] If this invention is explained in full detail based on the example of illustration below, although the massage device M in this massage machine is incorporated in the back board and bed of a chair, the example of illustration shows what the back whose reclining of a chair 1 is enabled also gives and is incorporated in 12, as shown in drawing 3 . While this chair 1 forms the seat 11 and an arm rest 13 in the lower frame 10 which carried out the framework in the pipe It is the thing which the lower part of the frame of a back board 12 is pivoted [ thing ] in the lower frame 10, and a gas spring 15 is attached [ thing ] between the lower limit of a back board 12, and the lower frame 10, and might make the back board 12 have put down by telescopic motion of a gas spring 15. The ottoman 16 which is the footstool which contained the vibration-massage device is attached at the tip of the seat 11 free [ rotation ].

[0007] As the massage device M is shown in drawing 5 - drawing 7 It consists of the main shafts 20 and connecting-shaft 95 grades which were constructed between a motor block 3, the gear block 4, the block 5 for strength adjustment, the power change-over block 6, the width-of-face slip block 7, the beat drive block 8, and the motor block 3 located in both ends and the gear block 4. When rolling the inside of the rail arranged on both ends in the back board 12 of the above-mentioned chair 1, it is formed as that in which the pinion 93 to which it gears with 94, 96, and the rack attached to the rail, and the massage device M is moved along with a rail by the rotation was arranged.

[0008] A motor block 3 is the thing equipped with the motor 30 by which the rotational frequency serves as adjustable, and with a pulley and a belt, the rotation output of this motor 30 is sent to the strength adjustment block 5 which builds in an electromagnetic clutch, and the power change-over block 6 which builds in the electromagnetic clutch of a pair, and is sent to the gear block 4 and the beat drive block 8 from the power change-over block 6.

[0009] And a worm shaft 41, a worm shaft 42, and the width-of-face drive block 7 are alternatively sent to three with the means for switching 43 and electromagnetic clutch with which the power sent to the gear block 4 consists of a planet device. it finds each other, the massager device M is moved up and down, a worm shaft 42 rotates [ the worm hole 91 connected with the above-mentioned pinion 93, or ] a main shaft 20 through the ellipse gears 45 and 46 of the worm hole 44 and a pair, and further, a worm shaft 41 rotates a feed screw 70, and mentions the width-of-face drive block 7 later -- as -- free medical treatment of a pair -- children's 2 and 2 spacing is changed.

[0010] The beat drive block 8 is the thing equipped with the driving shaft 80 and the crankshaft 82 with which the rotation drive of the circumference of an own shaft is made while being able to rotate the surroundings of this driving shaft 80 freely, and the power transmitted from the power change-over block 6 rotates a crankshaft 82 to the circumference of that shaft. And the end of the lever 85 which has connected the driving shaft 80 and the crankshaft 82 is connected with the delivery nut in the strength adjustment block 5 with which it consists of a delivery nut which performs shaft-orientations migration through the link by rotation of a feed screw and this feed screw, and when a strength adjustment block operates, a crankshaft 82 rotates the surroundings of a driving shaft 80.

[0011] Free [ a slide of the inner rings of spiral wound gasket 22 and 22 of a pair ], it is attached in the center section of the main shaft 20 so that it may rotate to a main shaft 20 and one. Both these inner rings of spiral wound gasket 22 and 22 are what inclined to hard flow mutually while carrying out eccentricity only of the tales doses in this direction to a main shaft 20, and that periphery is equipped with them free [ idling of outer rings of spiral wound gasket 24 and 24 ], respectively. and the roller-like free medical treatment whose idling the middle of arms 25 and 25 has fixed, respectively, and was enabled to the arm 25 at the flexion at each arm 25 tip so that clearly [ each outer rings of spiral wound gasket 24 and 24 ] from drawing 6 -- the child 2 is attached, respectively. Moreover, the other end of each arm 25 is connected with said crankshaft 82 through the connecting linkage 27. This connecting linkage 27 is performing connection to an arm 25 and a crankshaft 82 with the swivel joints 26 and

28 which enable three-dimensions-rotation, respectively, and the slide to those shaft orientations of the swivel joint 28 of connection with a crankshaft 82 is also especially attained to the crankshaft 82. Moreover, said each inner ring of spiral wound gasket 22 is connected with the feed screw 70 in the width-of-face slip block 7 by the connection arm 75. the connection arm 75 of the pair which the \*\*\*\* direction in this feed screw 70 is screwing in a reverse part when a feed screw 70 rotates -- both -- free medical treatment -- it makes approach mutually children 2 and 2 or keeps away, and that spacing is changed.

[0012] Since the inner ring of spiral wound gasket 22 rotated with a main shaft 20 is eccentricity and the inclined thing to the main shaft 20 when carrying out a deer and rotating a main shaft 20 by the motor 30 by this massage device M the free medical treatment attached in the outer ring of spiral wound gasket 24 with which this inner ring of spiral wound gasket 22 is equipped free [ idling ] through the arm 25 -- a child 2 Since the limit is added to the motion of an arm 25 by the connecting linkage 27, movement describing a three-dimensions-locus, i.e., movement to which a location is changed in the vertical direction, the shaft orientations of a main shaft 20, and the protrusion direction from a main shaft 20, is performed with rotation of a main shaft 20. free medical treatment of the pair which carries out such a motion to the symmetry -- children 2 and 2 -- a user's tooth back -- the so-called "kneading -- seeing -- " -- it rubs and a massage is given. in addition, "sideburns" and "counterboring" changed with hands of cut of a main shaft 20 -- it can rub and a massage can be obtained.

[0013] if the strength adjustment block 5 is operated and a crankshaft 82 is rotated around a driving shaft 80 as mentioned above by the motor 30, in order that an arm 25 may rotate the surroundings of an inner ring of spiral wound gasket 22 in connection with this -- free medical treatment -- a child 2 can change the amount of protrusions to the direction of a transverse plane in which a user's tooth back will be located, and can perform accommodation with a strong massage and a weak massage.

[0014] And when rotating the crankshaft 82 of the beat drive block 8 to the circumference of the shaft, The connecting linkages 27 and 27 moved along with rotation of the eccentric section of a crankshaft 82 are what moves an arm 25. free medical treatment at arm since motion of arm 25 at this time becomes likely to rotate the surroundings of inner ring of spiral wound gasket 22 which has stopped with outer ring of spiral wound gasket 24 25 tip -- although a child 2 calls also at the location of an inner ring of spiral wound gasket 22, he will see from a transverse plane, will become the straight-line reciprocating motion of the vertical direction mostly, and will



perform a beat massage.

[0015] furthermore -- the time of driving the width-of-face slip block 7 by the motor 30 -- free medical treatment of a pair -- in order that children 2 and 2 may move to the shaft orientations of a main shaft 20 and may change the spacing -- free medical treatment -- that to which the back of a chair also hangs down and the massage device M moves up and down along with 12 as mentioned above when it can be set as spacing according to a part and a pinion 93 is rotated -- it is -- therefore, free medical treatment -- a child's 2 location is changeable up and down. moreover -- the time of this migration -- free medical treatment -- if a child 2 can get the rolling massage which moves while stroking a body tooth back and operates the beat drive block 8 to coincidence further, the beat rolling massage accompanied by beat actuation can be obtained.

[0016] The control circuit C which performs motion control of this massage device to drawing 2 is shown. The inside A of drawing is an actuation machine equipped with the control circuit and display lamp which send out actuation of the switch group for directing various actuation, and these switch group as a digital signal, as shown also in drawing 4. As for the control circuit C where this actuation machine A was connected, a motor 30 is connected through the motorised circuit MD. the solenoid which constitutes said electromagnetic clutch etc. through the solenoid drive circuit SD connects -- having -- further -- free medical treatment -- the various sensors for detecting a child's 2 active-position information are connected.

[0017] this control circuit C operates each solenoid suitably while performing turning on and off of a motor 30, and a change-over of a hand of cut according to the contents of directions given from the actuation machine A -- making -- free medical treatment -- the various kinds of the above [ child / 2 ] -- free medical treatment -- making it operate \*\*\*\* -- free medical treatment, although a child 2 is moved When the "automatic course" switch SW formed in the actuation machine A is operated in this motion control It is what carries out sequential execution of the various massages, such as above-mentioned "sideburns", "counterboring", a "beat", and "rolling", as the program set up beforehand. Moreover, in this program, the information between which the above-mentioned massage is performed is also included in which location, and an effective massage can be easily obtained now.

[0018] But the request of wanting you to perform the existing massage in a certain location in the above-mentioned program for a long time depending on the condition of those who receive a massage, or liking arises, or that it is unnecessary produces this massage conversely. For this reason, Switch SR and the "abbreviation" switch

SS are formed in the above-mentioned actuation machine A "once again." It is for continuing the message to which Switch SR is carried out "once again" now, and carrying out once again, and moves during activation of an automatic course message at the message of the degree after [ this ] repeating the message under current activation once again, without moving from a control circuit C to the next message if Switch SR is operated "once again." (a) in drawing 1 shows the original automatic course message, and since Switch SR was operated "once again" during the beat message, after, as for (b) of drawing 1 , it repeats a "beat" message once again, it shows the case where it moves to the next "sideburns" message.

[0019] However, if it is in predetermined time t, it will be made to be the last message from the time of the last message ending the message which should be repeated when Switch SR is operated "once again", and the next message starting. That is, decision of the current message in the time of Switch SR being operated "once again" It is actually made to carry out by shifting only predetermined time t to shift of the message under activation. Drawing 1 (c) "Rolling" "beat" message in drawing 1 (b) already started since Switch SR was operated "once again" in predetermined time t after the message was completed is interrupted immediately, and the case where "rolling" message is being performed once again is shown. Thus, even if the message was already completed and it has moved from it to the next message when decision of the message which should be repeated when Switch SR is operated "once again" is regarded as wanting to repeat since only predetermined time t has shifted from actual shift of a message, the message as a request is repeatable.

[0020] In addition, a decision time and shift timing of an actual message cannot be shifted, but the message currently performed when the "abbreviation" switch SS is operated, as shown in drawing 1 (d) is immediately interrupted at the time, and it is made to have moved to the next message about the "abbreviation" switch SS of another side.

[0021]

[Effect of the Invention] Since the repeat of the demanded message actuation is made even if it only directed the repeat with the repeat directions means, the message actuation was already completed since a message more effective since message actuation to repeat is performed repeatedly can be received and the above-mentioned directions were moreover overdue for a while, and it has moved to the next message actuation according to this invention as mentioned above, it has the user-friendliness excelled.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view of one example of operation.

[Drawing 2] It is a block circuit diagram same as the above.

[Drawing 3] It is a side elevation same as the above.

[Drawing 4] It is the front view of an actuation machine same as the above.

[Drawing 5] It is the fracture top view of a massage device same as the above.

[Drawing 6] It is the fracture side elevation of a massage device same as the above.

[Drawing 7] It is the fracture rear view of a massage device same as the above.

[Description of Notations]

2 Free Medical Treatment -- Child

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